

IN THE CLAIMS

1. (Currently Amended) A method of regulating quorum sensing in bacteria comprising modulating the ability of LuxR or a homologue of LuxR to activate transcription, wherein quorum sensing is either i) downregulated by treating the bacteria with a peptide hydrolase or ii) upregulated by treating with a peptide hydrolase inhibitor.
2. (Currently Amended) A method according to claim 1 wherein said homologue of LuxR is selected from the list consisting of AhlR, AhvR, AsaR, BafR, Bis R, BpsR, BviR, CarR, CepR, CerR, CinR, CsaR, CviR, EagR, EcbR, EchR, EsaR, ExpR, HalR, LasR, ~~LuxS~~, M118752, MupR, PcoR, PhzR, PmlR, PpuR, PsmR, PsyR, RaiR, RhiR, RhlR, SdiA, SdiR, SmaR, SolR, SpnR, SprR, SwrR, TraR, TriR, TrlR, TrnR, VanR, VsmR, Y4qH, YenR, YpeR, YpsR, YruR, YtbR and YukR.
3. (Original) A method according to claim 1 or 2 wherein quorum sensing is downregulated by treating the bacteria with a peptide hydrolase
4. (Original) A method according to claim 3 wherein said peptide hydrolase is selected from the group consisting of Arg-C proteinase, Asp-N endopeptidase, BNPS Skatole, CNBr, chymotrypsin, clostripain, formic acid, glutamyl endopeptidase, iodosobenzoic acid, lysC, NTCB (2-nitro-5-thiocyanobenzoic acid), pepsin, proline-endopeptidase, proteinase K, Staphylococcal peptidase I, thermolysin and trypsin.
5. (Currently Amended) A method according to ~~any preceding~~ claim 3 wherein a-biofilm formation on a surface is inhibited.
6. (Original) A method according to claim 5 wherein said biofilm is caused by Pseudomonas, Burkholderia, Klebsiella, Acinetobacter, Flavobacterium, Enterobacter or Aerobacter.

7. (Original) A method according to claim 5 or claim 6 wherein said surface is wood, glass, concrete, plastic, ceramic, porcelain or metal.

8. (Currently Amended) A method according to ~~any one of claims~~ claim 5 to 7 wherein said surface forms part of a denture, a contact lens, an artificial valve, a prosthetic implant, a catheter, a pacemaker or a surgical pin.

9. (Currently Amended) ~~A method of disrupting the quorum sensing signal pathway of bacteria comprising administering to the bacteria~~ Use of a composition comprising a peptide hydrolase and an aqueous or a non-aqueous carrier for disrupting the quorum sensing signal pathway of bacteria.

10. (Currently Amended) ~~A use~~ The method according to claim 9, wherein the composition further comprises one or more compounds selected from the group consisting of a detergent, a surfactant, a biocide, a fungicide, an antibiotic or a mixture thereof.

11. (Currently Amended) ~~A use~~ The method according to claim 9 or claim 10 wherein the composition further comprises one or more of a pH regulator, a perfume, a dye or a colorant.

12. (Currently Amended) ~~A use~~ The method according to claim 9 ~~any one of claims 9 to 11~~, wherein said composition is in the form of a spray, a foam, a slurry, a dispensable liquid or is freeze dried.

13. (Original) A method according to claim 1 or 2 wherein quorum sensing is upregulated by treating the bacteria with a peptide hydrolase inhibitor.

14. (Currently Amended) A The method according to claim 13 wherein said peptide hydrolase inhibitor is selected from the group consisting of serine protease inhibitors,

including PMSF and Benzamide; cysteine (thiol) protease inhibitors, including PHMB and leupeptin; aspartate (acidic) protease inhibitors, including pepstatin and DAN; and metalloprotease inhibitors, including EDTA and EGTA.

15. (Currently Amended) ~~A~~ The method according to claim ~~12 or claim~~ 13 wherein said bacteria is *Bacillus subtilis*, *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Vibrio salmonicida*, *Aeromonas hydrophila*, *Burkholderia ambifaria*, *Burkholderia pseudomallei*, *Burkholderia mallei*, *Burkholderia stabilis*, *Burkholderia vietnamiensis*, *Burkholderia multivorans*, *Escherichia coli*, *Serratia marcescens*, *Salmonella typhi*, *Brucella suis*, *Brucella melitensis*, *Yersinia ruckeri*, *Hafnia alvei*, *Shigella flexneri*, *Serratia liquefaciens*, *Enterococcus faecalis*, *Pseudomonas aeruginosa*, *Burkholderia cepacia*, *Pseudomonas fluorescens*, *Providencia stuartii*, *Klebsiella aerogenes*, *Yersinia pestis*, *Yersinia enterocolitica* or *Yersinia pseudotuberculosis*.

16. (Currently Amended) ~~A~~ The method according to claim 13 ~~any one of claims 12 to 15~~ wherein an exogenous gene is inserted into the operon controlled by quorum sensing.

17. (Currently Amended) ~~A~~ The method according to claim 16 wherein said exogenous gene is required to be transported to the bacterial cell surface.

18. (Currently Amended) ~~A~~ The method according to claim 16 wherein said exogenous gene encodes an antigen.

19. (Currently Amended) ~~A~~ The method according to claim 18 wherein said antigen is of bacterial or viral origin.

20. (Currently Amended) A method of upregulating the quorum sensing signal pathway of bacteria comprising administering to the bacteria ~~Use of a composition comprising a peptide hydrolase inhibitor and an aqueous or a non-aqueous carrier for upregulating the quorum-sensing signal pathway of bacteria.~~